

REMARKS

This communication is in response to the Office Action mailed on September 13, 2007. In the Office Action claims 1-31 were pending of which claims 1-31 were rejected.

Rejections based on 35 U.S.C. §101

In the "Response to Arguments" section of the Office Action, the examiner states that the applicant's arguments were considered but moot in light of the new grounds of rejection. However, applicant respectfully observes that the previous Office Action had rejected claims 1-31 based on 35 U.S.C. §101 as non-statutory subject matter, and further, that the outstanding Office Action also rejects claims 1-31 based on non-statutory subject matter. Thus, it is not understood why this is a new ground for rejection. Also, it is observed that the outstanding Office Action admits at page 2, paragraph 2 that "Such computer readable storage media are statutory."

Also, the applicant observes that the Office Action misstates the Specification in stating that the applicant's Specification at page 7 and 8 describes a computer readable medium as comprising communication media that embodies a modulated data signal such as a carrier wave. In fact, applicant submits that the Specification states the following:

Communication media typically embodies computer readable instructions, data structures, program modules or other data in a modulated data signal such as a carrier wave or other transport mechanism and includes any information delivery media. The term "modulated data signal" means a signal that has one or more of its characteristics set or changed in such a manner as to encode information in the signal. By way of example, and not limitation, communication media includes wired media such as a wired network or direct-wired connection,... Combinations of any of the above should also be included within the scope of computer readable media. [Specification, page 8, lines 7-15, emphasis added]

Thus, it is believed that the above fairly describes what is meant by "communication media" as being a particular kind of storage media. Finally, it is noted that the Specification includes statements such as "by way of example" to ensure that the reader understands that the Specification is not meant to be limiting but is providing examples for the reader's understanding.

It is noted that the previous amendment contained arguments relating to what is meant by statutory subject matter arguing that the present claims are statutory. These arguments are herein incorporated by reference. In light of the forgoing, it is respectfully requested that the rejections based on 35 U.S.C. §101 non-statutory subject matter be withdrawn. It is asserted that the present claims 1-31 are statutory.

Information disclosure statement

The Office Action reports that the Information Disclosure Statement (IDS) filed on 8/17/07 failed to comply with 37 C.F.R. 1.98(a)(3) because it did not include a concise statement of relevance as understood by the individual designated in 37 C.F.R. 1.56(c). It is believed that the IDS includes a statement of relevance, "This paper is an overview of the state-of-the-art of methods for the Chinese word segmentation task, in particular some investigations of overlapping ambiguity distribution in the corpus, and the overlapping ambiguity detection coverage of the FMM+BMM method. It is asserted that this statement is from the inventor, a Chinese citizen, and is a concise statement of relevance as understood by this individual. Thus, it is believed that the IDS meets the requirements of 37 C.F.R. 1.98(a)(3). However, it is also believed that a complete English translation of the Chinese language reference is not available at this time.

Rejections based on obviousness

The Office Action next reports that claims 1-4, 6-7,

14-21, 23, 25-26, and 28 were rejected under 35 U.S.C. §103 as being unpatentable over U.S. Patent No. 5,806,021 to Chen et al. (hereinafter Chen) in view of U.S. Patent No. 6,968,308 to Brockett et al. (hereinafter Brockett) It is respectfully submitted that the cited references even when combined do not teach or suggest all of the features of claim 1.

Claim 1 recites a computer readable storage media storing instructions readable by a computer which, when implemented, cause the computer to resolve an overlapping ambiguity string in an input sentence of an unsegmented language by performing steps comprising segmenting the sentence into two possible segmentations, recognizing the overlapping ambiguity string in the input sentence as a function of the two segmentations, obtaining probability information based on at least one context feature adjacent the overlapping ambiguity string, and outputting an indication for selecting one of the two segmentations as a function of the obtained probability information. [emphasis added]

The primary reference Chen discloses automatic segmentation of continuous text using statistical approaches. The segmenting includes performing Forward Maximum Matching (FMM) segmentation and Backward Maximum Matching (BMM) segmentation. If the results are the same then the segmentation is accepted. However if the results are different then likelihood of both the FMM segmentation and BMM segmentation are calculated. The segmentation with the higher likelihood is chosen as the correct segmentation.

Importantly, Chen not appear to use context features or words or grammatical features adjacent or surrounding the overlapping ambiguity string to resolve the ambiguity as defined in the present claims. As recited in claim 1, probability information based on at least one context feature adjacent the overlapping ambiguity string is obtained and one of the two

segmentations is selected as a function of this obtained probability information. It is believed that this recitation regarding the least one context feature adjacent or surrounding the overlapping ambiguity string is a patentable improvement to other methods of resolving overlapping ambiguity strings.

The Office Action does admit that Chen does not disclose recognizing the overlapping ambiguity string (OAS) in the input sentence as a function of the two segmentations, obtaining probability information based on at least one context feature adjacent the overlapping ambiguity string and at least part of the recognized OAS for each of the FMM and BMM, outputting an indication for selecting one of the two segmentations as a function of the obtained probability information, and replacing the overlapping ambiguity string with tokens. It is submitted that the missing features are so critical to the invention as recited in claim 1 that it is unreasonable to consider Chen as a primary reference. It is also believed that one skilled in the art would not find it obvious to modify Chen with the features of claim 1.

The secondary reference Brockett discloses a method of segmenting non-segmented text using syntactic parse. However, Brockett describes that Japanese language uses four different kinds of script including Kanji, haragana, katakana, and roma. These four scripts can be used to spell the same word. Thus, the methods of segmenting according to Brockett are designed to segment words in a way that accounts for these variations. [Col. 2, lines 4-8] Thus, it is believed that Brockett is also very different from the features recited in claim 1, and further, that Brockett in no way teaches or suggests all the features of claim 1.

Thus, it is believed that claim 1 is patentable over the cited art. Claims 2-13 depend on claim 1 and are believed to be separately patentable. Reconsideration and allowance of claims 1-13 are respectfully requested.

As stated in the previous amendment, claim 14 had been amended in accordance with claim 1. Thus, the remarks above are hereby incorporated by reference. Thus, claim 14 is believed to be patentable over the cited art. Claims 15-24 depend on claim 14 and are believed to be separately patentable. Reconsideration and allowance of claims 14-24 are respectfully requested.

Claim 25 recites a method of constructing information to resolve overlapping ambiguity strings in an unsegmented language comprising recognizing overlapping ambiguity strings in a training data, replacing the overlapping ambiguity strings with tokens, and generating an N-gram language model comprising information on constituent words of the overlapping ambiguity strings and context features surrounding the overlapping ambiguity strings. Thus, claim 25 includes information on context features surrounding the OAS in the N-gram language model.

The discussion of the cited references is hereby incorporated by reference. It is submitted that even when combined that the cited references do not teach or suggest all of the features of claim 25. Thus, it is believed that claim 25 is patentable over the cited art. Claims 26-31 depend on claim 25 and are believed to be separately patentable. Reconsideration and allowance of claims 25-31 is respectfully requested.

The foregoing remarks are intended to assist the Office in examining the application and in the course of explanation may employ shortened or more specific or variant descriptions of some of the claim language. Such descriptions are not intended to limit the scope of the claims; the actual claim language should be considered in each case. Furthermore, the remarks are not to be considered exhaustive of the facets of the invention which are rendered patentable, being only examples of certain advantageous features and differences, which applicant's attorney chooses to mention at this time. For the foregoing reasons, applicant reserves the right to submit additional evidence showing the

distinction between applicant's invention to be unobvious in view of the prior art. Furthermore, in commenting on the references and in order to facilitate a better understanding of the differences that are expressed in the claims, certain details of distinction between the same and the present invention have been mentioned, even though such differences do not appear in all of the claims. It is not intended by mentioning any such unclaimed distinctions to create any implied limitations in the claims.

An extension of time is hereby requested for responding to the Office Action. A charge authorization for the extension of time fee is included herewith.

The Director is authorized to charge any fee deficiency required by this paper or credit any overpayment to Deposit Account No. 23-1123.

Respectfully submitted,

WESTMAN, CHAMPLIN & KELLY, P.A.

By: /Linda P. Ji, Reg. No. 49,027/
Linda P. Ji, Reg. No. 49,027
900 Second Avenue South, Suite 1400
Minneapolis, Minnesota 55402
Phone: (612) 334-3222 Fax: (612) 334-3312

SMK:dkm